

TECHNICAL UPDATE

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Tensile Bond Strength Of IPS Empress 2 On Desensitizer-Treated Dentin

A. Saracoglu, C. Cura, E. Cal, And M. Turkun, J Dent Res. Vol 87
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Objectives: The null hypothesis of the study is that dentin desensitizers will not have a negative effect on the tensile bond strength (TBS) of IPS Empress 2 restorations luted with Variolink II on the desensitizer treated dentin surfaces.

Materials and Methods: Forty-five all-ceramic restorations (Empress 2, Ivoclar-Vivadent) were fabricated and ultrasonically cleaned for 15 min in ethanol and in deionized water. Forty-five extracted human molar teeth were embedded in PMMA moulds and cut to expose their dentin surfaces. The specimens were then divided into three groups consisting of two desensitizers and a control group (n=15/group). Fifteen freshly-cut dentin specimens in the first group were treated with a glutaraldehyde containing desensitizer (S) (Systemp desensitizer, Ivoclar-Vivadent), the other fifteen specimens were treated with a chlorhexidine containing desensitizer (H) (Hemaseal & Cide, Advantage Dental Products, Inc.) and the last fifteen untreated specimens served as control (C). Ceramic samples were luted to the prepared dentin surfaces with Variolink II, Ivoclar-Vivadent - dual-curing resin cement and subjected to thermo-cycling (5.000 cycles between 50C and 550C). TBS tests were performed with a universal testing machine and the data were statistically analyzed (One-way ANOVA and Tukey test at Alpha= .05).



Results: There were significant differences between group C and group H (p=0.00), while the differences between groups C and S were insignificant (p=0.690).

Conclusion: Both of the desensitizers did not negatively affect the TBS of the adhesive system, furthermore Hemaseal & Cide increased the TBS significantly, therefore they can be recommended for reducing postoperative sensitivity in all-ceramic restorations.

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